Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL GUIDELINE CLEARINGHOUSE

General

Guideline Title

Stereotactic body radiation therapy for early-stage non-small cell lung cancer: executive summary of an ASTRO evidence-based guideline.

Bibliographic Source(s)

Videtic GMM, Donington J, Giuliani M, Heinzerling J, Karas TZ, Kelsey CR, Lally BE, Latzka K, Lo SS, Moghanaki D, Movsas B, Rimner A, Roach M, Rodrigues G, Shirvani SM, Simone CB II, Timmerman R, Daly ME. Stereotactic body radiation therapy for early-stage non-small cell lung cancer: executive summary of an ASTRO evidence-based guideline. Pract Radiat Oncol. 2017 Sep-Oct;7(5):295-301. [19 references] PubMed

Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

NEATS Assessment

National Guideline Clearinghouse (NGC) has assessed this guideline's adherence to standards of trustworthiness, derived from the Institute of Medicine's report Clinical Practice Guidelines We Can Trust.

= Poor = Fair = Good = Very Good = Excellent

Assessment	Standard of Trustworthiness
NO	Disclosure of Guideline Funding Source
	Disclosure and Management of Financial Conflict of Interests
	Guideline Development Group Composition

YES	Multidisciplinary Group
UNKNOWN	Methodologist Involvement
▮▮▮▯▯	Patient and Public Perspectives
	Use of a Systematic Review of Evidence
▮▮▮▮▯	Search Strategy
▮▮▮▮▮	Study Selection
▮▮▮▮▮	Synthesis of Evidence
	Evidence Foundations for and Rating Strength of Recommendations
▮▮▮▮▮	Grading the Quality or Strength of Evidence
▮▮▮▮▮	Benefits and Harms of Recommendations
▮▮▮▮▮	Evidence Summary Supporting Recommendations
▮▮▮▮▮	Rating the Strength of Recommendations
▮▮▮▮▮	Specific and Unambiguous Articulation of Recommendations
▮▮▮▮▯	External Review
▮▮▮▮▮	Updating

Recommendations

Major Recommendations

Definitions for the strength of recommendations (Strong , Conditional) and quality of evidence (High, Moderate, and Low) are provided at the end of the "Major Recommendations" field.

Key Question 1: When is stereotactic body radiation therapy (SBRT) appropriate for patients with T1-2, N0 non-small cell lung cancer (NSCLC) who are medically operable?

Statement KQ1A: Any patient with operable stage I NSCLC being considered for SBRT should be evaluated by a thoracic surgeon, preferably in a multidisciplinary setting, to reduce specialty bias.

Recommendation strength: Strong
Quality of evidence: Moderate

Statement KQ1B: For patients with "standard operative risk" (i.e., with anticipated operative mortality of <1.5%) and stage I NSCLC, SBRT is not recommended as an alternative to surgery outside of a clinical trial. Discussions about SBRT are appropriate, with the disclosure that long-term outcomes with SBRT >3 years are not well-established. For this population, lobectomy with systematic mediastinal lymph node evaluation remains the recommended treatment, though a sublobar resection may be considered in select clinical scenarios.

Recommendation strength: Strong
Quality of evidence: High

Statement KQ1C: For patients with "high operative risk" (i.e., those who cannot tolerate lobectomy, but are candidates for sublobar resection) stage I NSCLC, discussions about SBRT as a potential alternative to surgery are encouraged. Patients should be informed that while SBRT may have decreased risks from treatment in the short term, the longer-term outcomes >3 years are not well-established.

Recommendation strength: Conditional
Quality of evidence: Moderate

Key Question 2: When is SBRT appropriate for medically inoperable patients with T1-2, N0 NSCLC:

With centrally located tumors
With tumors >5 cm in diameter
Lacking tissue confirmation
With synchronous primary or multifocal tumors
Who underwent pneumonectomy and now have a new primary tumor in their remaining lung?

For patients with centrally located tumors?

Statement KQ2A: SBRT directed towards centrally located lung tumors carries unique and significant risks when compared to treatment directed at peripherally located tumors. The use of 3-fraction regimens should be avoided in this setting.

Recommendation strength: Strong
Quality of evidence: High

Statement KQ2B: SBRT directed at central lung tumors should be delivered in 4 or 5 fractions. Adherence to volumetric and maximum dose constraints may optimize the safety profile of this treatment. For central tumors for which SBRT is deemed too high-risk, hypofractionated radiation therapy utilizing 6 to 15 fractions can be considered.

Recommendation strength: Conditional
Quality of evidence: Moderate

For patients with tumors >5 cm in diameter?

Statement KQ2C: SBRT is an appropriate option for tumors >5 cm in diameter with an acceptable therapeutic ratio. Adherence to volumetric and maximum dose constraints may optimize the safety profile of this treatment.

Recommendation strength: Conditional
Quality of evidence: Low

For patients lacking tissue confirmation?

Statement KQ2D: Whenever possible, obtain a biopsy prior to treatment with SBRT to confirm a histologic diagnosis of a malignant lung nodule.

Recommendation strength: Strong
Quality of evidence: High

Statement KQ2E: SBRT can be delivered in patients who refuse a biopsy, have undergone non-diagnostic biopsy, or who are thought to be at prohibitive risk of biopsy. Prior to SBRT in patients lacking tissue confirmation of malignancy, patients are recommended to be discussed in a multidisciplinary manner with a consensus that the lesion is radiographically and clinically consistent with a malignant lung lesion based on tumor, patient, and environmental factors.

Recommendation strength: Strong

Quality of evidence: Moderate

For patients with synchronous primary or multifocal tumors?

Statement KQ2F: Multiple primary lung cancers (MPLC) can be difficult to differentiate from intrathoracic metastatic lung cancer and pose unique issues for parenchymal preservation, therefore it is recommended that they are evaluated by a multidisciplinary team.

Recommendation strength: Strong
Quality of evidence: Moderate

Statement KQ2G: Positron emission tomography (PET)/computed tomography (CT) and brain magnetic resonance imaging (MRI) are recommended in patients suspected of having MPLC to help differentiate from intrathoracic metastatic lung cancer. Invasive mediastinal staging should be addressed on a case-by-case basis.

Recommendation strength: Strong
Quality of evidence: Moderate

Statement KQ2H: SBRT may be considered as a curative treatment option for patients with synchronous MPLC. SBRT for synchronous MPLC has equivalent rates of local control and toxicity but decreased rates of overall survival compared to those with single tumors.

Recommendation strength: Conditional
Quality of evidence: Low

Statement KQ2I: SBRT is recommended as a curative treatment option for patients with metachronous MPLC. SBRT for metachronous MPLC has equivalent rates of local control and toxicity and overall survival compared to those with single tumors.

Recommendation strength: Strong
Quality of evidence: Moderate

For patients who underwent pneumonectomy and now have a new primary tumor in their remaining lung?

Statement KQ2J: SBRT may be considered a curative treatment option for patients with metachronous MPLC in a post-pneumonectomy setting. While SBRT for metachronous MPLC appears to have equivalent rates of local control and acceptable toxicity compared to single tumors, SBRT in the post-pneumonectomy setting might have a higher rate of toxicity than in patients with higher baseline lung capacity.

Recommendation strength: Conditional
Quality of evidence: Low

Key Question 3: For medically inoperable early stage lung cancer patients, how can SBRT techniques be individually tailored to provide an adequate dose for tumor eradication with minimal risk to normal structures in "high-risk" clinical scenarios, including:

Tumors with intimal proximity/involvement of mediastinal structures (bronchial tree, esophagus, heart, etc.)
Tumors abutting or invading the chest wall?

For tumors with intimal proximity/involvement of mediastinal structures (bronchial tree, esophagus, heart, etc.)?

Statement KQ3A: For tumors in close proximity to the proximal bronchial tree, SBRT should be delivered in 4 to 5 fractions. Physicians should endeavor to meet the constraints that have been utilized in prospective studies given the severe toxicities that have been reported.

Recommendation strength: Strong

Quality of evidence: Low

Statement KQ3B: For tumors in close proximity to the esophagus, physicians should endeavor to meet the constraints that have been utilized in prospective studies or otherwise reported in the literature given the severe esophageal toxicities that have been reported.

Recommendation strength: Strong
Quality of evidence: Low

Statement KQ3C: For tumors in close proximity to the heart and pericardium, SBRT should be delivered in 4 to 5 fractions with low incidence of serious toxicities to the heart, pericardium and large vessels observed. Adherence to volumetric and maximum dose constraints utilized in prospective trials or reported in the literature may optimize the safety profile of this treatment.

Recommendation strength: Strong
Quality of evidence: Low

For tumors abutting or invading the chest wall?

Statement KQ3D: SBRT is an appropriate option for treatment and should be offered for T1-2 tumors that abut the chest wall. Grade 1 and 2 chest wall toxicity is a common occurrence post SBRT that usually resolves with conservative management. Patients with peripheral tumors approximating the chest wall should be counseled on the possibility of this common toxicity.

Recommendation strength: Strong
Quality of evidence: High

Statement KQ3E: SBRT may be utilized in patients with cT3 disease due to chest wall invasion without clear evidence of reduced efficacy or increased toxicity compared to tumors abutting the chest wall.

Recommendation strength: Conditional
Quality of evidence: Low

Key Question 4: In medically inoperable patients, what is the role of SBRT as salvage therapy for early stage lung cancer that recurs:

After conventionally fractionated radiation therapy,
After SBRT,
After sublobar resection?

After conventionally fractionated radiation therapy?

Statement KQ4A: The use of salvage SBRT after primary conventionally fractionated radiation may be offered to selected patients due to reported favorable local control and survival.

Recommendation strength: Conditional
Quality of evidence: Low

Statement KQ4B: Patients treated with salvage SBRT after primary conventionally fractionated radiation should be informed of significant (including fatal) toxicities.

Recommendation strength: Strong
Quality of evidence: Low

Statement KQ4C: Patient selection for salvage SBRT after primary conventionally fractionated radiation is a highly individualized process. Radiation oncologists should assess evidence-based patient, tumor, and treatment factors prior to treatment initiation.

Recommendation strength: Strong
Quality of evidence: Low

After SBRT?

Statement KQ4D: Patient selection for salvage SBRT after previous SBRT is a highly individualized process. Radiation oncologists should assess evidence-based patient, tumor, and treatment factors prior to treatment initiation.

> Recommendation strength: Strong
> Quality of evidence: Low

After sublobar resection?

Statement KQ4E: Patient selection for salvage SBRT after prior sublobar resection is a highly individualized process. Radiation oncologists should assess evidence-based patient, tumor, and treatment factors prior to treatment initiation.

> Recommendation strength: Strong
> Quality of evidence: Low

Definitions

Strength of Recommendation

Recommendations were classified as "strong" or "conditional." A strong recommendation indicated the task force was confident the benefits of the intervention clearly outweighed the harms, or vice-versa, and "all or almost all informed people would make the recommended choice for or against an intervention." Conditional recommendations were made when the balance between risks and benefits was more even or was uncertain. In these cases, the task force believed "most informed people would choose the recommended course of action, but a substantial number would not" and, therefore, "clinicians and other health care providers need to devote more time to the process of shared decision making by which they ensure that the informed choice reflects individual values and preferences."

Quality of Evidence

> High: The task force is very confident that the true effect lies close to that of the estimate of the effect.
> Moderate: The task force is moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
> Low: The task force's confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Early-stage non-small cell lung cancer

Guideline Category

Evaluation

Management

Treatment

Clinical Specialty

Internal Medicine

Oncology

Pulmonary Medicine

Radiation Oncology

Thoracic Surgery

Intended Users

Physicians

Guideline Objective(s)

To systematically review the clinical evidence for stereotactic body radiation therapy (SBRT) for early stage non-small cell lung cancer (NSCLC), with specific attention to patient selection for SBRT in challenging or controversial clinical settings, individualization of SBRT in high-risk clinical scenarios, and use of SBRT as a salvage therapy for recurrent disease

Target Population

Patients 18 years and older with T1-2, N0 non-small cell lung cancer (NSCLC)

Interventions and Practices Considered

1. Evaluation by thoracic surgeon and multidisciplinary team
2. Lobectomy with systematic mediastinal lymph node evaluation
3. Sublobar resection
4. Stereotactic body radiation therapy (SBRT)
5. SBRT as salvage therapy after recurrence
6. Biopsy to confirm a histologic diagnosis
7. Positron emission tomography (PET)/computed tomography (CT)
8. Brain magnetic resonance imaging (MRI)

Major Outcomes Considered

- Overall survival (OS)
- Disease-free survival (DFS)
- Recurrence rates
- Acute toxicity
- Late toxicity
- Quality of life

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Literature Review

A systematic literature review formed the basis of the guideline. An analytic framework incorporating the population, interventions, comparators, and outcomes (PICO) was used to develop search strategies in MEDLINE PubMed for each key question (KQ). The searches identified English-language studies between January 1995 and November 2015 that evaluated adults with T1-2 N0 non-small cell lung cancer (NSCLC) receiving primary or salvage stereotactic body radiation therapy (SBRT). The search was later extended until August 3, 2016. Both MeSH terms and text words were utilized and terms common to all searches included: *lung cancer; non-small cell lung cancer; lung neoplasms[MeSH]; carcinoma, non-small-cell lung[MeSH]; lung carcinoma; stereotactic body radiation therapy; stereotactic body radiotherapy; stereotactic ablative radiation therapy; stereotactic ablative radiotherapy; SBRT; and SABR*. Additional terms specific to the KQs were also incorporated. The outcomes of interest were overall survival (OS) and disease-free survival (DFS), recurrence rates, acute and late toxicity, and quality of life. The electronic searches were supplemented by hand searches.

A total of 402 abstracts were retrieved and screened by the American Society for Radiation Oncology (ASTRO) staff then by the task force. Subsequently, 230 articles were eliminated based on the inclusion and exclusion criteria. The inclusion criteria were: age ≥18 years, early stage lung cancer, treatment with SBRT, and publication date 1995 to 2016. The exclusion criteria were: small cell lung cancer, node positive or metastatic lung cancer, pediatric patients, pre-clinical or non-human studies, dosimetric studies without clinical outcomes, non-English language, and otherwise not relevant to the KQs. Major studies presented as abstracts but not yet published are discussed in the narrative but were not used to support the recommendations.

Number of Source Documents

Ultimately, 172 articles were included and abstracted into detailed tables to provide supporting evidence for the guideline recommendations.

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Quality of Evidence

High: The task force is very confident that the true effect lies close to that of the estimate of the effect.
Moderate: The task force is moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low: The task force's confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect.

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

The studies were abstracted into detailed tables to provide supporting evidence for the guideline recommendations.

The quality of evidence underlying each recommendation statement was categorized as either high, moderate, or low. Refer to the "Rating Scheme for the Strength of the Evidence" field for a description of each quality level.

Methods Used to Formulate the Recommendations

Expert Consensus (Delphi)

Description of Methods Used to Formulate the Recommendations

Process

The American Society for Radiation Oncology (ASTRO) Board of Directors approved creation of an evidence-based guideline on SBRT for early stage lung cancer in June 2015. A task force of radiation oncologists specializing in lung cancer, along with surgical representatives, was recruited. A patient representative was also included. The members were drawn from academic settings, community practice, and residency.

Through a series of conference calls and emails, the task force and the ASTRO staff completed the systematic review, created evidence tables, and formulated the recommendation statements and narratives for the guideline. The task force members were divided into writing groups by key question (KQ) according to their areas of interest and expertise.

Grading of Evidence and Recommendations and Consensus Methodology

Guideline recommendation statements were developed based on the current literature using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) methodology, which is an explicit, systematic approach to defining the recommendation strength and quality of evidence. When available, high-quality data formed the basis of the statements in accordance with Institute of Medicine (IOM) standards. When necessary, expert opinion supplemented the evidence.

Consensus within the task force on the recommendation statements was evaluated through a modified Delphi approach adapted from the American Society of Clinical Oncology (ASCO) process. In an online survey, task force members rated their agreement with each recommendation on a five-point Likert scale, from strongly disagree to strongly agree. The patient representative abstained from rating KQ 3E because she was not comfortable doing so. A pre-specified threshold of ≥75% of raters selecting "agree" or "strongly agree" indicated when consensus was achieved. If a recommendation statement did not meet this threshold, it was modified and re-surveyed or excluded from the guideline. Recommendation statements achieving consensus that were modified after the first round were also re-surveyed.

Rating Scheme for the Strength of the Recommendations

Strength of Recommendation

Recommendations were classified as "strong" or "conditional." A strong recommendation indicated the task force was confident the benefits of the intervention clearly outweighed the harms, or vice-versa, and "all or almost all informed people would make the recommended choice for or against an intervention." Conditional recommendations were made when the balance between risks and benefits was more even or was uncertain. In these cases, the task force believed "most informed people would choose the recommended course of action, but a substantial number would not" and, therefore, "clinicians and other health care providers need to devote more time to the process of shared decision making by which they ensure that the informed choice reflects individual values and preferences."

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

The initial draft was reviewed by five expert reviewers (see Acknowledgements in the original guideline document) and American Society for Radiation Oncology (ASTRO) legal counsel. A revised draft was placed on the ASTRO Web site for public comment in November 2016. Following integration of the feedback, the Board of Directors approved the final guideline in March 2017.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

- An emerging body of literature has demonstrated overall survival (OS) rates of 76% to 86% at three years following stereotactic body radiation therapy (SBRT) in select cohorts of operable patients who have declined surgery (see Table 1 in the supplement [see the "Availability of Companion Documents" field]). Moreover, a pooled analysis of two prematurely closed phase III trials suggested superior OS at three years with SBRT versus surgery. While neither of these studies provides the assurance that SBRT offers similar survival to surgery beyond three years, the data suggest some equipoise and support recruitment of patients for enrollment in randomized studies that compare SBRT to surgery.
- Adhering to protocol dose constraints such as those used in RTOG 0813 may reduce the risk of severe toxicity.
- For patients disposed to aggressive treatment, SBRT may be beneficial for preserving pulmonary

parenchyma while still delivering ablative therapy to the target lesion(s).
- A growing body of evidence suggests that SBRT is an effective treatment option with an acceptable safety profile in selected patients with metachronous multiple primary lung cancers (MPLC) after pneumonectomy.
- Salvage SBRT is associated with good local control (LC) and an acceptable toxicity profile, but intrathoracic failure is still a significant issue.

Refer to the "Narrative" sections in the supplemental material (see the "Availability of Companion Documents" field) for information on benefits found in specific trials.

Potential Harms

- Treatment of peripheral lesions may result in rare but potentially serious toxicities. Damage to the chest wall may be expressed as skin, soft tissue, bone, and neurologic symptoms. Neuropathic pain and rib fractures may occur with 10% to 15% of treatments targeting tumors abutting the chest wall, although symptoms are generally modest and they are predicted by chest wall dose volume metrics. Skin ulcers, brachial plexopathy, and bronchial or esophageal fistulas have been reported, though these are extremely uncommon, and their risk is modifiable during the planning process when identified.
- In one study, after a median follow-up of 17.5 months, 8 patients (11.4%) experienced grade 3 or 4 adverse events, including declines in pulmonary function, pleural effusion, and pneumonia. Six patients (8.6%) may have died (grade 5 toxicity) as a consequence of treatment due to fatal hemoptysis, infectious pneumonia, and pericardial effusion. Other retrospective studies have also reported severe toxicities and fatal complications following stereotactic or hypofractionated radiation therapy directed at central tumors. These include potentially devastating toxicities, such as tracheal or great vessel rupture, esophageal ulceration, and spinal cord myelopathy.
- Interpretation of surveillance imaging following SBRT is challenging and may lead to unnecessary biopsies, salvage surgery, or false reassurance that the tumor has not relapsed.
- Salvage surgery in the setting of post-SBRT progression may be technically challenging and pose increased operative risk compared to up-front surgery in a non-irradiated field, particularly in the case of central tumors.
- In patients with significant comorbidities and limited lung function, bronchoscopic biopsy and peripheral computerized tomography (CT)-guided biopsy can be associated with significant risks, including pneumothorax and hemoptysis.

Refer to the "Narrative" sections in the supplemental material (see the "Availability of Companion Documents" field) for information on toxicity results and other harms found in specific trials.

Contraindications

Contraindications

Because of the scale of the risks, it is advisable to avoid stereotactic body radiation therapy (SBRT) for central tumors with the 3 fraction regimens used for peripheral tumors.

Qualifying Statements

Qualifying Statements

- American Society for Radiation Oncology (ASTRO) guidelines present scientific, health, and safety information and may reflect scientific or medical opinion. They are available to ASTRO members and

the public for educational and informational purposes only. Commercial use of any content in this guideline without the prior written consent of ASTRO is strictly prohibited. Adherence to this guideline will not ensure successful treatment in every situation. This guideline should not be deemed inclusive of all proper methods of care or exclusive of other methods reasonably directed to obtaining the same results. The physician must make the ultimate judgment regarding any specific therapy in light of all circumstances presented by the patient. ASTRO assumes no liability for the information, conclusions, and findings contained in its guidelines. This guideline cannot be assumed to apply to the use of these interventions performed in the context of clinical trials. This guideline was prepared on the basis of information available at the time the panel was conducting its research and discussions on this topic. There may be new developments that are not reflected in this guideline and that may, over time, be a basis for ASTRO to revisit and update the guideline.

- Regardless of clinical scenario, the task force uniformly recommends multidisciplinary review of all patients under consideration for stereotactic body radiation therapy (SBRT), including input from thoracic surgeons, radiation oncologists, medical oncologists, radiologists, pathologists, and/or pulmonologists, ideally in a multidisciplinary tumor board or clinic, and consideration of enrollment on clinical trials for all eligible patients. Although extending survival and providing optimal local control (LC) are often seen as the most important goals of cancer treatment, patients should nonetheless be engaged in the treatment decision-making process to ensure that their treating physician understands each individual's risk tolerance and goals of care. Toxicity, pain, and other side-effects impact quality of life (QOL) differently for each patient. Thus, individual goals and QOL should be considered by all disciplines when making treatment recommendations.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Patient Resources

Staff Training/Competency Material

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

Videtic GMM, Donington J, Giuliani M, Heinzerling J, Karas TZ, Kelsey CR, Lally BE, Latzka K, Lo SS, Moghanaki D, Movsas B, Rimner A, Roach M, Rodrigues G, Shirvani SM, Simone CB II, Timmerman R, Daly ME. Stereotactic body radiation therapy for early-stage non-small cell lung cancer: executive summary of an ASTRO evidence-based guideline. Pract Radiat Oncol. 2017 Sep-Oct;7(5):295-301. [19 references] PubMed

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2017 Sep-Oct

Guideline Developer(s)

American Society for Radiation Oncology - Professional Association

Source(s) of Funding

American Society for Radiation Oncology

Guideline Committee

American Society for Radiation Oncology (ASTRO) Guidelines Subcommittee

Stereotactic Body Radiation Therapy for Early Stage Non-Small Cell Lung Cancer Guideline Task Force

Composition of Group That Authored the Guideline

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Financial Disclosures/Conflicts of Interest

Conflict of Interest Disclosure Statement

Before initiating work on this guideline, all task force members completed disclosure statements and pertinent disclosures are published within this report. Where potential conflicts are detected, remedial measures to address them are taken and noted here.

MG: honoraria and travel expenses from Elekta; CK: previous research funding from Varian; KL: stock in Pfizer and Synta Pharmaceuticals; SL: previous research funding from Elekta and previous travel expenses and honoraria from Accuray; DM: previous travel expenses from Varian; previous honoraria for Augmenix; BM: research funding and travel expenses from Varian and Philips, patents with Henry Ford Health System (no royalties received), and NCI small business grant with Humanetics; AR: research funding from Varian, Boehringer Ingelheim, and Pfizer, previous advisory board for AstraZeneca; MR: previous travel expenses from BTG, Varian, and Elekta; RT: research funding from Varian, Accuray, and Elekta.

These disclosures were reviewed by the Guidelines Subcommittee chairs (for task force chairs), the task force chairs (for task force members), and the Conflict of Interest Review Committee. They were determined to be sufficiently managed by disclosure to the task force and in this publication.

Guideline Endorser(s)

European Society for Radiotherapy & Oncology - Medical Specialty Society

International Association for the Study of Lung Cancer - Disease Specific Society

Royal Australian and New Zealand College of Radiologists - Professional Association

Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

Guideline Availability

Available from the Practical Radiation Oncology Web site .

Availability of Companion Documents

The following are available:

Stereotactic body radiation therapy for early-stage non-small cell lung cancer: an ASTRO evidence-based guideline. Pract Radiat Oncol. 2017 Sep-Oct. 53 p. Available from the Practical Radiation Oncology Web site .

Serious toxicities associated with stereotactic body radiotherapy (SBRT) and strategies to reduce the risks. Continuing medical education course. Arlington (VA): American Society of Radiation Oncology (ASTRO). Available from the American Society of Radiation Oncology (ASTRO) Web site .

Patient Resources

The following is available:

Stereotactic radiation (SRS, SBRT, SABR). Patient brochure. Arlington (VA): American Society for Radiation Oncology (ASTRO); 2016. 2 p. Available from the RTAnswers Web site .

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC Status

This NGC summary was completed by ECRI Institute on October 13, 2017. The information was verified by the guideline developer on November 14, 2017.

This NEATS assessment was completed by ECRI Institute on September 19, 2017. The information was verified by the guideline developer on November 14, 2017.

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